

WHAT IS CLAIMED IS:

1. A device for aiding in the gripping of a hand held instrument normally held by the hand without a gripping aid, comprising:

5 a body having a top portion, a bottom portion and a bore extending from said top to said bottom portion terminating in top and bottom openings, said bore adapted to receive an instrument having a length greater than said bore,

10 said body frictionally engaging said instrument enabling the body to be adjustably positioned along a length of the instrument,

15 said body having a finger shelf extending radially and downwardly from said bottom portion of said body, forming a finger shelf upper surface sized to receive a dorsal surface of a terminal phalanx of a middle finger of a hand,

20 said body having a front surface in the form of a saddle between said finger shelf and said top portion with said front surface merging with said finger shelf upper surface, said front surface sized to receive a lateral surface of the terminal phalanx of the middle finger, and

25 said finger shelf upper surface extending from said front surface of said body by a distance sufficient to extend from said lateral surface to the median of said dorsal surface.

30 2. A device in accordance with claim 1, wherein said body further comprises a back surface in the form of a saddle, said back surface adapted to receive the anterior side of the first finger of the hand.

3. A device in accordance with claim 1, wherein said upper surface of said finger shelf is substantially flat.

5 4. A device in accordance with claim 1, wherein said finger shelf is a lower finger shelf, said device further comprising an upper finger shelf extending radially from said body having an upwardly facing upper surface sized to hold an index finger of a hand, said upper surface of said upper finger shelf being adapted to receive an anterior side of a proximal phalanx of an index finger.

10 5. A device in accordance with claim 4, wherein said upper surface of said lower finger shelf has an inner edge, said upper surface of said upper finger shelf has an outer edge, said body having:

15 a vertical surface which is convex in shape, said vertical surface located between said upper finger shelf and said lower finger shelf, said vertical surface extending outwardly from said inner edge of said upper surface of said lower finger shelf to said outer edge of said upper surface of said upper finger shelf.

20 6. A device in accordance with claim 5, wherein said front surface is located between said upper finger shelf and said lower finger shelf.

25 7. A device in accordance with claim 4, wherein said upper surface of said upper finger shelf has a left side and a right side, said finger shelf extending upwardly towards a selected one of said left side and said right side.

8. A device in accordance with claim 4, wherein said bore has an axis, and said lower finger shelf is offset from said upper finger shelf by a predetermined angle about said axis.

5 9. A device in accordance with claim 4, wherein said body further comprises a left side and a right side, and a selected one of said left and right sides has a surface in the form of a saddle, said surface of said selected side being adapted to receive the
10 anterior side of the terminal phalanx of the index finger of the hand.

10. A device in accordance with claim 9, wherein said upper surface of said upper finger shelf extends upwardly toward said selected side.

15 11. A device in accordance with claim 4, wherein said body further comprises a left side and a right side, and a selected one of said left and right sides has a surface with a concave depression, said concave depression being adapted to receive the anterior
20 side of the terminal phalanx of the index finger of the hand.

25 12. A device in accordance with claim 11, wherein said upper surface of said lower finger shelf has an inner edge, said upper surface of said upper finger shelf has an outer edge, and wherein the other one of said left and right sides has a side surface which is convex in shape, said side surface located between said upper finger shelf and said lower finger shelf, said side surface extending outwardly from said inner edge of said
30 upper surface of said lower finger shelf to said outer edge of said upper surface of said upper finger shelf.

13. A device in accordance with claim 4, wherein said upper finger shelf has a right side and a left side, said body having:

5 a back surface in the form of a saddle, and
an ovate portion located above said upper
finger shelf, wherein said upper surface of said upper
finger shelf has an inner surface which curves upwardly
to join said ovate portion, said right and left sides
each curving upwardly to join with said ovate portion,
10 said ovate portion having a curved undersurface which
merges with said back surface of said body.

14. A device in accordance with claim 13, wherein said ovate portion has a convex back surface which extends to meet said undersurface and to form a detente between said convex back surface of said ovate
15 portion and said underside, thereby to prevent said device from slipping out of the hand.

15. A device in accordance with claim 14, wherein said bore has a bore axis, said ovate portion has
20 a longitudinal axis substantially normal to said bore axis, said upper finger shelf is offset by a first angle from said longitudinal axis, and said lower finger shelf is offset by a second angle from said longitudinal axis, said second angle being greater than said first angle.

25 16. A device in accordance with claim 1, wherein said finger shelf has a flat bottom surface.

17. A device in accordance with claim 1, wherein said body has a left side and a right side, and
30 said upper surface of said finger shelf is substantially flat between said left side and said right side.

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18. A device in accordance with claim 1, wherein said finger shelf has a convex bottom surface.

19. A device in accordance with claim 1, wherein said body further comprises a back surface having a depression, said back surface adapted to receive the anterior side of the first finger of the hand.

20. A device in accordance with claim 1, wherein said body includes a writing instrument.

21. A device in accordance with claim 1, wherein said body includes a cutting instrument.

22. A device in accordance with claim 1, wherein said body includes a dental pick instrument.

23. A device in accordance with claim 1, wherein said finger shelf includes on its upper surface a concave depression adapted to receive a joint between the middle and terminal phalanges of the middle finger.

24. A device in accordance with claim 1, wherein said body includes a left surface, a right surface and a back surface, each of said left, right and back surfaces in the form of a saddle, each of said left, right and back surfaces located between said finger shelf and said top portion of said body.

25. A device for aiding in the gripping of a hand held instrument normally held without need for an additional member to aid in gripping thereof, comprising:
a body having a bore adapted to frictionally grip said instrument at an adjustable position along a length of the instrument,

(Claim 25 continued)

5 said body having an upper finger shelf
extending radially from said body having an upwardly
facing upper surface sized to hold an index finger of a
hand, said upper surface of said upper finger shelf being
adapted to receive the anterior side of the proximal
phalanx of the index finger,

10 said body having a lower finger shelf extending
radially and downwardly from said body forming an upper
surface sized to hold the middle finger of the hand, said
upper surface of said lower finger shelf being adapted to
receive the dorsal surface of the terminal phalanx of the
middle finger.

20 Subal 26. In combination, an instrument and a
gripping device for aiding in the gripping of said
instrument, said instrument having a barrel portion and
an operating portion extending from an end of the
instrument opposite said barrel portion for performing an
operation, said gripping device being an integral part of
said instrument positioned between said barrel portion
and said operating portion, and comprising:

25 first and second ends respectively adjacent to
said barrel portions and said operating portion;

30 a body of said gripping device between said
first and second ends having a shelf extending radially
outward from the opening in said first end, a surface
area of one surface of said shelf being of a size
sufficient to engage a portion of any finger of a hand
holding said device;

 said surface being aligned transverse to a
longitudinal axis of said instrument;

 said body having a substantially annular-shaped
surface opposite said shelf which gradually reduces in

diameter from said first end toward an intermediate portion between said first and second ends and which gradually increases in diameter from said intermediate portion toward said second end to form an intermediate region of reduced diameter which is of a size sufficient to receive portions of any finger of the gripping hand whereby a force for urging said operating portion against an engaging surface is applied to said shelf in a direction substantially parallel to said longitudinal axis and is significantly greater than forces required to hold said device and which are applied in a direction substantially perpendicular to said longitudinal axis.

27. In combination, an instrument and an integral gripping device for aiding in the gripping of the instrument, said instrument having a barrel portion held by a barrel portion and an operating portion extending from an end of the instrument opposite said barrel portion for performing an operation, said gripping device being an integral part of said instrument positioned between said barrel portion and said operating portion, and comprising:

first and second ends respectively adjacent said barrel portion and said operating portion;

a body of said gripping device between said first and second ends having a generally annular shape and curving radially outwardly and then downwardly in moving from said second end to said first end and generally tapering inwardly at a portion of said one-piece body intermediate said first and second ends and gradually curving outwardly from said intermediate portion toward said second end;

a finger engaging surface extending from said second end toward said first end, said surface being aligned generally parallel to a longitudinal axis of said

instrument and gradually curving outwardly along a lower portion thereof adjacent said first end and terminating in an edge which joins a curved convex surface which forms said first end and extends radially inwardly toward the opening in said first end;

said lower curved portion having a curved convex shape defining a force applying shelf diagonally aligned with the longitudinal axis, said finger engaging surface having a contour for resting a finger of a gripping hand thereon and said shelf portion provided to urge said operating portion toward engagement with the surface by application of a force to said shelf portion by any one of a tip, lateral surface, dorsal surface or knuckle of a finger applied thereto;

said gradually tapering intermediate portion being of a size sufficient to be engaged by at least another finger of a gripping hand which by engaging said tapered portion is capable of supporting the device with only a minimum force exerted upon said device in a direction perpendicular to said longitudinal axis whereas the force acting on said shelf and applied in a direction generally parallel to said longitudinal axis is significantly greater than the force supporting said device.

28. In combination, an instrument and an integral gripping device for aiding in the gripping of said instrument, said instrument having a barrel portion and an operating portion extending from an end of the instrument opposite said barrel portion for performing an operation, said gripping device being an integral part of said instrument positioned between said barrel portion and said operating portion, and comprising:

first and second ends respectively adjacent said barrel portion and said operating portion;

(Claim 28 continued)

5 a body of said gripping device between said first and second ends having a truncated annular-shaped periphery defining a cross-section having a substantially D-shaped perimeter at said first end, a flat surface portion of the truncated periphery defining a linear portion of said D-shaped perimeter;

10 said body having an annular periphery at said second end;

15 said flat surface portion defining a gripping surface which is substantially flat over a portion of its length between said first end and said second end and which curves gradually over the remainder of its length to provide a curved convex surface portion;

20 the annular-shaped periphery of said one-piece body gradually tapering inwardly from said first end toward an intermediate portion and thereafter tapering outwards toward said second end to define a substantially hour glass shape.

25 29. The combination according to claim 28, wherein said flat portion of said gripping surface is substantially parallel to a longitudinal axis of said bore.

30 30. The combination according to claim 29, wherein the curved convex surface area curves away from said longitudinal axis.

35 31. The combination according to claim 28, wherein said gripping surface has a width measured transverse to said longitudinal axis which increases from said first end to said second end.

32. The combination according to claim 28, wherein said second end surrounding the opening therein has a substantially hemispheric shape.

33. The combination according to claim 28, wherein the gripping surface terminates in a curved arcuate edge.

Sub 34. The combination according to claim 28, wherein a radial distance of a perimeter of said annular periphery at said second end is at least equal to a distance of a curved portion of said D-shaped perimeter.

35. In combination, an instrument and an integral gripping device for aiding in the gripping of said instrument, said instrument having a barrel portion and an operating portion at an end of the instrument opposite said barrel portion for performing an operation, said gripping device comprising:

first and second ends respectively adjacent to said barrel portion and said operating portion;

a body of said gripping device between said first and second ends having a generally hour-glass shape on two opposing sides, one of said two opposing sides being expanded at said first end to form said support shelf for supporting a portion of a single finger;

two remaining sides of said device having generally linear surfaces extending in a longitudinal direction and having a convex surface when viewed in cross-section; and

said two remaining sides and a remaining one of the opposing sides having a generally hour-glass shape serving as single or plural finger support surfaces.

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5 36. A combination according to claim 35 wherein said instrument is a writing instrument having an elongated tubular-shaped supply member arranged in said instrument and aligned at one end with said operating portion, which comprises a writing point, said tubular member being aligned so that its longitudinal axis is displaced from central a longitudinal axis of said barrel portion.

10 37. A combination according to claim 36 wherein said writing point is displaced from said support shelf so as to be positioned so that the longitudinal central axis of the instrument lies between said shelf and the longitudinal central axis of the tubular-shaped supply member.

15 38. The combination according to claim 36 further comprising a closing cap for sealing an open end of said barrel portion, said cap having an internal annular recess for receiving and properly positioning an end of said tubular member regardless of an angular orientation of said cap relative to said barrel portion.

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